

## DEPARTMENT OF NOTES, REVIEWS, ETC.

It is the purpose, in this department, to present from time to time brief original notes, both of methods of work and of results, by members of the Society. All members are invited to submit such items. In the absence of these there will be given a few brief abstracts of recent work of more general interest to students and teachers. There will be no attempt to make these abstracts exhaustive. They will illustrate progress without attempting to define it, and will thus give to the teacher current illustrations, and to the isolated student suggestions of suitable fields of investigation.—[Editor.]

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### CULTURES IN VITRO.

In recent numbers of the Jour. Exp. Med. (March-May, 1911), Messrs. Carrel and Burrows give the technic and results of numerous cultivations of the tissues of cold and warm-blooded animals outside the body. Primary cultures were made by using fragments taken directly from the living animals. Secondary cultures, made of materials removed from the primary cultures were successfully made, especially between the third and eighth days. The results were corroborative and in extension of those previously reported in these notes. Tissues from malignant tumors of various kinds were successfully grown; e. g. the Rous sarcoma of the chicken, sarcoma of the rat, carcinoma of rat and dog. Human carcinoma did not give good results; because, as the authors believe, of its liquefying effect on the culture plasma. They hope to modify the technic in such a way as to secure the growth of the latter also.

The same authors find that the growth of tissues *in vitro* is regulated by the dilution of the culture medium. They discover that growth can both be accelerated and retarded by modifying the plasma. A slight dilution, for example, always accelerated the growth of spleen tissue, of skin, of the heart and liver of chickens. The inference is made that the composition of the normal plasma of the body (interstitial lymph) is not the *optimum* for the growth of any of the body tissues; and thus growth is normally held in check. Otherwise, the tissues finding their optimum conditions might grow indefinitely and thus produce hypertrophy and even disaster. In this event the causes for cessation of growth in animals at maturity are not merely within the cell.

In the conditions found here it may be too that we have a suggestion as to the possible origin of sportive hypertrophy and other growth mutations.

#### BACILLUS LEPRÆ IN COLD-BLOODED ANIMALS.

Couret (Jour. Exp. Med., May, 1911) reports inoculating tadpoles, fishes, turtles, etc., with *Bacillus leprae*. Quite in contrast with the common result in warm-blooded animals, which are highly refractory to this Bacillus, the cold-blooded vertebrates show great receptiveness to the germs. The Bacilli multiply readily in any of these hosts and may occur generally among the cells or be localized in the large, so-called "lepra-cells" which they are supposed to invade. The fish, etc., show no lesions or other external signs of their infection. Dr. Couret believes that the evidence of fish being the source of human infection by this disease is highly strengthened by these results.

#### "GIANT CELLS" IN TUMORS.

Mallory (Jour. Med. Research, April, 1911) finds at least two types of giant cells in tumors. One results from multiple mitosis and rapid growth. These are the true giant cells and are found in different kinds of tumors. The second type are not indigenous tumor cells at all; but are formed by the coalescence of a number of invading endothelial leucocytes. They should not therefore give the names to tumors (e. g. "giant-cell sarcoma").

#### EPITHELIAL FIBRILS AND BRIDGES.

In Arch. Mikr. Anat., 1910, p. 659, Rosenstadt gives an account of studies on the epidermis of different animals, both adult and embryonic. He finds that the fibrils common to epidermal cytoplasm run longitudinally, transversely, and vertically (i. e., perpendicular to the exposed surface). In each of the three directions fibres pass across the intercellular spaces, giving continuous protoplasmic connection among the cells. In epithelia that produce cilia on the free surface, similar fibrils extend into the cilia.